

AP European History  
The Scientific Revolution/Enlightenment DBQ  
*This question is taken directly from a recent AP European History exam.*

(Suggested writing time – 45 minutes)

Directions: The following question is based on the accompanying Documents 1-10. Some of the documents have been edited for the purpose of this exercise. Write your answer in the essay booklet.

This question is designed to test your ability to work with historical documents. As you analyze the documents, take into account both the sources of the documents and the authors' points of view. Write an essay on the following topic that integrates your analysis of the documents; in no case should documents simply be cited and explained in a “laundry list” fashion. In your interpretation of the documents you may refer to relevant historical facts and developments not mentioned in the documents.

1. Analyze and discuss the attitudes and reactions toward the participation of women in the sciences during the 17<sup>th</sup> and 18<sup>th</sup> centuries.

Historical Background

While rarely acknowledged, women actively participated in scientific research in chemistry, astronomy, biology, botany, physics, and medicine. Although most European universities and academies of science excluded women entirely, in Italy a few women held professorships in science and mathematics. Women translated scientific works on physics, astronomy, entomology, and anatomy; they also participated in scientific discussions held in salons.

Document 1

She was so deeply engaged in astronomical speculation that she neglected her household. The daylight hours she spent, for the most part, in bed because she had tired herself from watching the stars at night.

Johann Eberti, describing the German astronomer Marie Cunitz, whose 1650 book on astronomical tables clarified the work of Johannes Kepler.

Document 2

While I began this little treatise, it was solely for my own satisfaction. I objected to myself that it was not the profession of a lady to teach; that she should remain silent, listen and learn, without displaying her own knowledge. On the other hand, I flattered myself that I am not the first lady to have had something published; that minds have no sex and that if the minds of women were cultivated like those of men, they would be equal to the minds of the latter.

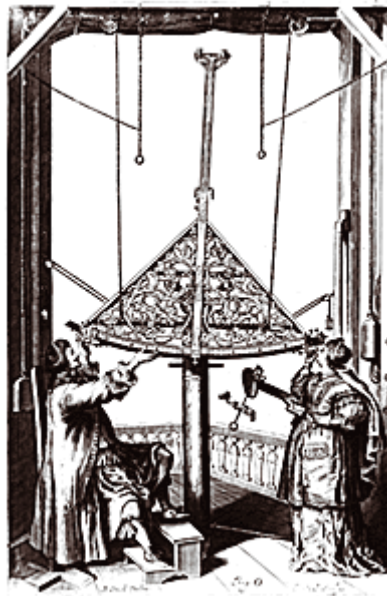
Marie Meurdrac, French scientist, forward to her *Chemistry Simplified for Women*, 1666

### Document 3

After dinner, I walked to a meeting of the Royal Society of Scientists in expectation of the Duchess of Newcastle [author of *A World Made by Atomes*, 1653], who had desired to be invited to the Society. She was invited after much debate, pro and con; it seems many being against it. The Duchess hath been a good, comely woman; but her dress so antique and her deportment so ordinary, that I do not liker her at all, nor did I hear her say anything that was worth hearing.

Samuel Pepys, English diarist, 1667

### Document 4



Johannes and Elisabetha Hevelius using a sextant to collaborate on astronomical research.

Johannes Hevelius, *The Heavenly Machine*, 1683

### Document 5

Since my youth, I have studies insects. When I realized that butterflies and moths develop more quickly than other caterpillars, I collected all the caterpillars that I could find, in order to observe their metamorphosis. Thus, I withdrew from human society and engaged exclusively in these investigations. In addition, I learned the art of drawing so that I could draw and describe them as they were in nature.

Maria Sibylla Merian, German entomologist  
*Wonderful Metamorphoses and Special  
Nourishment of Caterpillars*, 1679

#### Document 6

Early in the morning (about 2 a.m.) the sky was clear and starry. Some nights before, I had observed a variable star, and my wife (as I slept) wanted to find and see it for herself. In so doing, she found a comet in the sky. At which time she woke me, and I found that it was indeed a comet. I was surprised that I had not seen it the night before.

Gottfried Kirch, German astronomer,  
husband of Maria Winkelmann, 1680

#### Document 7

I have often thought that women of elevated mind advance knowledge more properly than do men. Women, whose position puts them above troublesome and laborious cares, are more detached and therefore more capable of contemplating the good and the beautiful.

Gottfried Leibniz, German  
mathematician and philosopher, 1697

#### Document 8

I do not believe that Maria Winkelmann should continue to work on our official calendar of observations. It simply will not do. Even before her husband's death, the Academy was ridiculed because its calendar was prepared by a woman. If she were to be kept on in such a capacity, mouths would gape even wider.

Johann Theodor Jablonski, secretary to the  
Berlin Academy of Science, letter to the Academy  
president opposing Maria Winkelmann's application  
for membership in the Academy, 1710.

#### Document 9

Some will feel as if I declare war on men [by practicing medicine] or at least attempt to deprive them of their privilege. Many of my own sex will think I place myself above them.

Dorothea Erxleben, first woman to be granted a  
German M.D. (University of Halle), *Inquiry  
into the Causes Preventing the Female Sex  
from Studying*, 1742

#### Document 10

Learned women attract little attention as long as they limit their study to music and the arts. When a woman dares to attend a university, however, or qualifies for a receives a doctorate, she attracts a great deal of attention. The legality of such an undertaking must be investigated.

Johann Junker, head of the University  
of Halle, a German university, 1745

### Document 11

Do not reproach me for my work on translating Newton's *Principia*. Never have I made a greater sacrifice to Reason. I get up at nine, sometimes eight. I work till three; then I take coffee; I resume work at four; at ten I stop to eat a morsel alone; I talk till midnight with Voltaire, who comes to have supper with me, and at midnight I go to work again, and keep on till five in the morning. I must do this or lose the fruit of my labors if I should die in childbirth.

Marquise Emilie du Chatelet, French aristocrat  
and scientist, letter to the Marquis Jean Francois  
de Saint-Lambert, 1749

### Document 12

Women should not study medicine and astronomy. These subjects fall beyond their sphere of competence. Women should be satisfied with the power that their grace and beauty give them and not extend their empire to include medicine and astronomy.

Marie Thiroux d'Arconville, French  
anatomical illustrator, in her preface,  
*Thoughts on Literature, Morals, and Physics*,  
1775

### Document 13

Usually one thinks of a learned woman as neurotic. And should she ever go beyond the study of literature into higher sciences, one knows in advance that her clothing will be neglected and her hair will be done in antiquarian fashion. She forces her way into circles of men for whom she is nothing more than a book. For Mademoiselle Schlozer, this is not at all the case. She sews, knits, and understands household economy perfectly well. One must gain her confidence before one comes to know the scholar in her.

Gottingen newspaper article describing Dorothea  
Schlozer, the first woman to receive a Ph. D. from  
a German university, 1787